

## Claims

1. A nucleic acid encoding a variant  $\alpha_{2B}$ -adrenoceptor protein, the variant protein comprises a deletion of at least 1 glutamate from a glutamic acid repeat element of 12 glutamates, amino acids 298–309, in an acidic stretch of 18 amino acids 294–311, located in a 3<sup>rd</sup> intracellular loop of the receptor protein.
2. The nucleic acid of claim 1, wherein the variant protein comprises a deletion of 3 glutamates, amino acids 307–309, from said glutamic acid repeat element of 12 glutamates, amino acids 298–309, in said acidic stretch of 18 amino acids 294–311, located in the 3<sup>rd</sup> intracellular loop of the receptor polypeptide.
3. The nucleic acid of claim 2 comprising a genomic nucleotide sequence as set forth in SEQ ID NO:1.
4. The nucleic acid of claim 1, wherein said nucleic acid is cDNA.
5. An RNA sequence fully complementary to the DNA sequence of claim 1.
6. A variant  $\alpha_{2B}$ -adrenoceptor protein comprising a deletion of at least 1 glutamate from said glutamic acid repeat element of 12 glutamates, amino acids 298–309, in said acidic stretch of 18 amino acids 294–311, located in the 3<sup>rd</sup> intracellular loop of the receptor polypeptide.
7. The variant  $\alpha_{2B}$ -adrenoceptor protein of claim 6, wherein the protine comprises a deletion of 3 glutamates, amino acids 307–309, from said glutamic acid repeat element of 12 glutamates, amino acids 298–309, in said acidic stretch of 18 amino acids 294–311, located in the 3<sup>rd</sup> intracellular loop of the receptor polypeptide.
8. The variant  $\alpha_{2B}$ -adrenoceptor protein of claim 7 comprising an amino acid sequence set forth in SEQ ID NO: 2.

9. An assay for determining the presence or absence of the nucleic acid of claim 1.
10. The assay of claim 9, wherein the assay is a DNA-assay.
11. A method for determining the presence or absence in a biological sample of the nucleic acid of claim 1 comprising contacting a single-stranded form of said nucleic acid if present in the sample with a capturing nucleic acid probe and a detector nucleic acid probe to form a complex and detecting the presence or absence of the complex.
12. The method of claim 11, wherein the capturing nucleic acid probe is attached or capable of attaching to a solid phase, and comprises a cDNA encoding the variant  $\alpha_{2B}$ -adrenoceptor protein, wherein a detected signal from the solid phase is an indication of the presence in the sample of said nucleic acid.
13. The method according to claim 11, wherein the capturing nucleic acid probe is attached or capable of attaching to a solid phase, and comprises a cDNA encoding a non-variant  $\alpha_{2B}$ -adrenoceptor protein, wherein a detected signal from the solid phase is an indication of the absence in the sample of said nucleic acid.
14. A method for screening a subject to determine if the subject is at risk for developing a disease involving vascular contraction of coronary arteries or is in need of  $\alpha_{2B}$ -selective or  $\alpha_{2B}$ -nonselective  $\alpha_2$ -adrenoceptor antagonist therapy, said method comprises obtaining a biological sample of the subject and determining whether the subject (i) has the insertion/insertion (I/I) or deletion/insertion (D/I) genotypes of the human  $\alpha_{2B}$ -adrenoceptor protein or (ii) has the D/D genotype of the human  $\alpha_{2B}$ -adrenoceptor protein, wherein if the subject has the D/D genotype, the subject is at risk for developing a disease involving vascular contraction of coronary arteries or is in need of  $\alpha_{2B}$ -selective  $\alpha_2$ -adrenoceptor antagonist therapy.
15. The method of claim 14, wherein the assay is a DNA-assay.
16. A capturing probe which comprises a single strand of the cDNA of claim 4.

17. A capturing probe which comprises a single strand of a cDNA encoding a non-variant  $\alpha_{2B}$ -adrenoceptor protein.